

**REMARKS**

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. § 1.111, and in light of the remarks which follow, are respectfully requested.

Claim 1 has been amended to define the binder resin. This amendment is supported by the specification, at least page 12, lines 7-9. In addition, claims 1 and 5 have been amended to further improve their form. No new matter has been added. Upon entry of the Amendment, claims 1-6 will be all the claims pending in the application.

**I. English Translation of Japanese Patent Document**

In compliance with the Examiner's request at page 9 of the March 11, 2008 Office Action, Applicants submit herewith an English translation of Japanese Patent Document No. 61-163347.

**II. Information Disclosure Statement**

Applicants filed a second Information Disclosure Statement with a Form PTO-1449 on April 16, 2008, subsequent to the issuance of the present Office Action. The Examiner is respectfully requested to initial the submitted Form PTO-1449 and return a signed and dated copy in the next official communication.

**III. Response to Rejections under 35 U.S.C. § 103(a)**

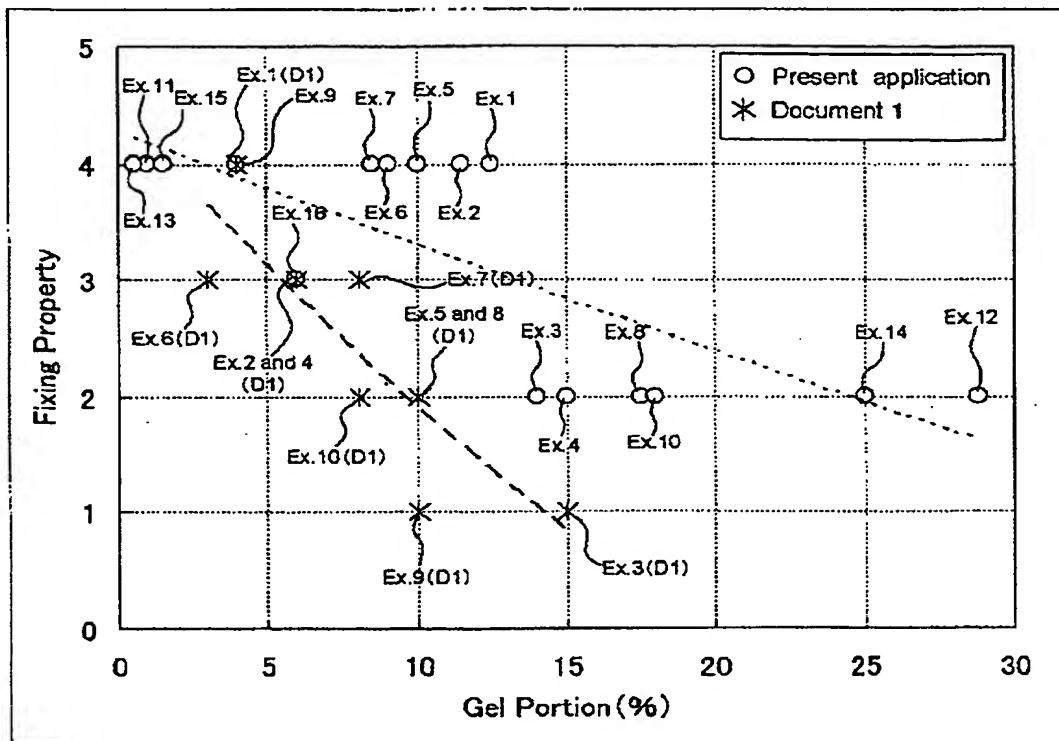
a. Claims 1 and 3-6 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent Application Publication No. 2002-0076637 to Iwa et al. Applicants respectfully submit that the claims as amended are patentable over Iwa for at least the following reasons.

Independent claim 1 recites a binder resin for a toner, wherein the binder resin is obtained by reacting a crosslinking agent (A) with a vinyl polymer (B) satisfying the requirements (I) to (III), to obtain a crosslinked resin (C) which contains a gel portion of from 1 to 50%, and mixing the crosslinked resin (C) with a vinyl polymer (D).

Iwa discloses a toner binder for electrophotography obtained by heating and melting a vinyl resin (A) and a vinyl resin (B), wherein the vinyl resin (A) contains glycidyl groups, the weight-average molecular weight of which resin is 10,000 to 100,000 and the epoxy value of which resin is 0.005 to 0.1 Eq/100g, and wherein the vinyl resin (B) contains carboxyl groups, the acid value of which resin is 1 to 30 mg KOH/g and the glass transition temperature of which resin is 40 to 70 °C.

Though the vinyl resins (A) and (B) disclosed in Iwa might correspond to the crosslinking agent (A) and the vinyl resin (B) recited in present claim 1, respectively, Iwa fails to disclose adding an additional resin to the resulting resin obtained from the vinyl resin (A) and vinyl resin (B). That is, Iwa does not teach or suggest a vinyl resin (D), as recited in claim 1. As such, Iwa does not teach or suggest a binder resin as recited in claim 1.

Furthermore, Applicants submit herewith a Declaration under 37 C.F.R. § 1.132 by Mr. Yoshihoto Hirota. The Declaration demonstrates the unexpected results which are obtainable in the presently claimed invention and thus further supports the patentability of the claims. Specifically, in the Declaration, Examples 1-16 described in the present specification and Examples 1-10 described in Iwa (D1) were compared in terms of gel portion and fixing property. The results are summarized in Tables 1-4 therein and the values of fixing property were also plotted on a graph as duplicated below:



As shown in the above graph, when the toners having the same gel portion, e.g., Example 5 of the present specification and Examples 5 and 8 of Iwa; and Example 4 of the present specification and Example 3 of Iwa, are compared, Examples 5 and 4 of the present specification are superior to Examples 5 and 8, and Example 3, respectively, of Iwa, in terms of fixing property.

In view of the foregoing, Applicants respectfully submit that claim 1 is not obvious over Iwa and thus the rejection should be withdrawn. Additionally, claims 3-6 depend from claim 1 and thus are patentable over Iwa at least by virtue of their dependency.

**b.** Claim 2 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Iwa et al. in view of Japanese Patent Document No. 09-244295 to Masazumi et al. ("JP '295") Applicants respectfully submit that claim 2 is patentable over Iwa in view of JP '295 for the same reasons as set forth above in Section III.a.

Furthermore, JP '295 discloses a resin composition for a toner. In JP '295, the resin composition is obtained by mixing a resin (A) with a resin (B), wherein the resin (A) is composed of a lower molecular weight component having a molecular weight of  $3 \times 10^3$  to  $5 \times 10^4$ , and a higher molecular weight component having a molecular weight of  $3 \times 10^5$  to  $5 \times 10^6$ , and wherein the resin (B) is composed of a vinyl polymer (b1) having a glycidyl group or a  $\beta$ -methylglycidyl group, and a vinyl polymer (b2) other than the vinyl polymer (b1).

The resin (A), the vinyl polymer (b1), and the vinyl polymer (b2) disclosed in JP '295 might correspond to the vinyl polymer (B), the crosslinking agent (A), and the vinyl polymer (D) recited in present claim 1, respectively. However, in JP '295, the vinyl polymer (b2) is mixed with the resin (A) after being mixed with the vinyl polymer (b1). JP '295 fails to disclose a binder resin obtained by reacting the vinyl polymer (b1) with the vinyl polymer (A), then mixing thus obtained polymer with the vinyl polymer (b2). Therefore, JP '295 does not rectify the deficiencies of Iwa. Thus, even if JP '295 and Iwa are combined, the combination still would not result in the subject matter of claim 1. Claim 2 depends from claim 1.

In view of the foregoing, Applicants respectfully submit that claim 2 is not obvious over the cited references, and thus the rejection should be withdrawn.

c. Claims 1 and 3-6 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent Application Publication No. 2002-0098431 to Fujikawa et al. Applicants respectfully submit that the claims as amended are patentable over Fujikawa for at least the following reasons.

Fujikawa discloses a toner comprising a binder resin and a colorant. In Fujikawa, the binder resin is obtained by mixing of a vinyl resin having a carboxyl group with a vinyl resin having an epoxy group.

Though the vinyl resin having a carboxyl group and the vinyl resin having an epoxy group disclosed in Fujikawa might correspond to the vinyl polymer (B) and the crosslinking agent (A) recited in present claim 1, respectively, Fujikawa fails to disclose a vinyl resin (D) as recited in present claim 1. As such, Fujikawa does not disclose or suggest a binder resin as recited in claim 1.

In view of the foregoing, Applicants respectfully submit that claim 1 is not obvious over Fujikawa, and thus the rejection should be withdrawn. Additionally, claims 2-6 depend from claim 1, and thus are patentable over Fujikawa at least by virtue of their dependency.

d. Claim 2 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Fujikawa et al. in view of JP '295. Applicants respectfully submit that claim 2 is patentable over Fujikawa in view of JP '295 for the same reasons as set forth above in Section III.c.

Furthermore, JP '295 discloses a resin composition for a toner. In JP '295, the resin composition is obtained by mixing a resin (A) with a resin (B), wherein the resin (A) is composed of a lower molecular weight component having a molecular weight of  $3 \times 10^3$  to  $5 \times 10^4$ , and a higher molecular weight component having a molecular weight of  $3 \times 10^5$  to  $5 \times 10^6$ , and the resin (B) is composed of a vinyl polymer (b1) having a glycidyl group or a  $\beta$ -methylglycidyl group, and a vinyl polymer (b2) other than the vinyl polymer (b1).

The resin (A), the vinyl polymer (b1), and the vinyl polymer (b2) disclosed in JP '295 might correspond to the vinyl polymer (B), the crosslinking agent (A), and the vinyl polymer (D) recited in present claim 1, respectively. However, in JP '295, the vinyl polymer (b2) is mixed with the resin (A) after being mixed with the vinyl polymer (b1). JP '295 fails to disclose a binder resin obtained by reacting the vinyl polymer (b1) with the vinyl polymer (A), then mixing thus obtained polymer with the vinyl polymer (b2). Therefore, JP '295 does

not rectify the deficiencies of Fujikawa. Thus, even if JP '295 and Fujikawa are combined, the combination still would not result in the subject matter of claim 1. Claim 2 depends from claim 1.

In view of the foregoing, Applicants respectfully submit that claim 2 is not obvious over the cited references, and thus the rejection should be withdrawn.

e. Claims 1-6 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over JP '295. Applicants respectfully submit that the claims as amended are patentable over JP '295 for at least the following reasons.

JP '295 discloses a resin composition for a toner. In JP '295, the resin composition is obtained by mixing a resin (A) with a resin (B), wherein the resin (A) is composed of a lower molecular weight component having a molecular weight of  $3 \times 10^3$  to  $5 \times 10^4$ , and a higher molecular weight component having a molecular weight of  $3 \times 10^5$  to  $5 \times 10^6$ , and the resin (B) is composed of a vinyl polymer (b1) having a glycidyl group or a  $\beta$ -methylglycidyl group, and a vinyl polymer (b2) other than the vinyl polymer (b1).

The resin (A), the vinyl polymer (b1), and the vinyl polymer (b2) disclosed in JP '295 might correspond to the vinyl polymer (B), the crosslinking agent (A), and the vinyl polymer (D) recited in present claim 1. However, in JP '295, the vinyl polymer (b2) is mixed with the resin (A) after being mixed with the vinyl polymer (b1). JP '295 fails to disclose a binder resin obtained by reacting the vinyl polymer (b1) with the vinyl polymer (A), then mixing thus obtained polymer with the vinyl polymer (b2). Therefore, JP '295 does not disclose or suggest the binder resin recited in claim 1.

In view of the foregoing, Applicants respectfully submit that claim 1 is not obvious over JP '295, and thus the rejection should be withdrawn. Additionally, claims 2-6 depend from claim 1, and thus are patentable over JP '295 at least by virtue of their dependency.

f. Claims 1-6 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Japanese Patent Document No. JP 09-319140 to Yasuo et al. ("JP '140") Applicants respectfully submit that the claims as amended are patentable over JP '140 for at least the following reasons.

JP '140 discloses a toner for electrophotography comprising a glycidyl group-containing vinyl resin (A) and a COOH group-containing vinyl resin (B), wherein the vinyl resin (A) has a weight average molecular weight of 10,000 to 100,000, and an epoxy value of 0.005 to 0.1 Eq/100g, and the vinyl resin (A) is used as a crosslinking agent, and wherein the vinyl resin (B) has an acid value of 1 to 30 mg KOH/g and a glass transition temperature of 40 to 70 °C.

Though the vinyl resin (A) and the vinyl resin (B) disclosed in JP '140 might correspond to the crosslinking agent (A) and the vinyl polymer recited in present claim 1, respectively, JP '140 fails to disclose a toner comprising an additional resin. That is, JP '140 does not teach or suggest a vinyl resin (D) as recited in present claim 1. As such, JP '140 does not disclose or suggest the binder resin recited in claim 1.

In view of the foregoing, Applicants respectfully submit that claim 1 is not obvious over JP '140, and thus the rejection should be withdrawn. Additionally, claims 2-6 depend from claim 1, and thus are patentable over JP '140 at least by virtue of their dependency.

#### IV. Conclusion

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any

questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (202) 452-7932 at his earliest convenience.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By: 

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